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INSTITUTE OF ARCHAEOLOGY

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SESSION, 1945-46

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STAFF

Miss K. M. Kenyon, M.A., F.S.A. ..	*Acting Director and Secretary*
Professor F. E. Zeuner, D.Sc., Ph.D. ..	*Professor of Environmental Archaeology*
Professor Sidney Smith, M.A., F.S.A. ..	*Professor of Western Asiatic Archaeology*
Miss K. M. Richardson, B.A., F.S.A. ..	*Assistant in Department of Prehistoric European Archaeology*
Mrs. Maxwell-Hyslop, F.S.A.	*Assistant in Department of Western Asiatic Archaeology*
Miss J. du Plat Taylor, F.S.A.	*Temporary Librarian*
Miss Ione Gedye, B.A.	*Technical Assistant, Repair Department*
Miss O. Starkey	*Technical Assistant, Repair Department*
M. B. Cookson	*Photographic Assistant*

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Session 1938-39 and the War Years

The Session 1938-1939

THE Second Annual Report of the Institute was published in 1939. Before the Third Report, intended to cover the session 1938–1939, could be prepared, war broke out, and no Report was therefore issued. The session had been one of very full activity, with a full programme of lectures and technical training. It seems fitting to begin this first post-war Report with some mention of the activities of the last pre-war session, so that they may be included in the published records of the Institute.

Exhibitions and Collections

The principal event of the year was an exhibition of the Pottery of the Early Bronze Age of Cyprus. The Exhibition was opened on Friday, March 10th, 1939, by the Earl of Athlone, K.G., Chancellor of the University, who was accompanied by H.R.H. Princess Alice. The pottery forming the subject of the Exhibition was from excavations at Vounous carried out by Mr. James Stewart on behalf of the British School at Athens. No group of pottery of this period had previously been exhibited in this country, and it attracted much attention from archaeologists interested in the subject. The bulk of the Exhibition was presented to the Institute by Sir Charles Marston, F.S.A., and forms undoubtedly the most important addition to the collections of the Institute yet received.

Further important accessions were to the Syrian groups in the Western Asiatic collections. One group came from the excavations of Sir Leonard Woolley at Atchana, presented through the kindness of Sir Percival David. A second group came, in return for a contribution from the Institute, from Mr. M. E. L. Mallowan's excavations at Brak and neighbouring sites.

Public Lectures

A series of three public lectures was given in the autumn term by Dr. P. Dikaios, Curator of the Cyprus Museum, on Excavations at Erimi, Khirokitea and Vounous. At the third lecture, the chair

was taken by the Earl of Harewood, K.G., who was accompanied by H.R.H. the Princess Royal.

During the autumn term, there was also a series of lectures on *Recent Field Work in the British Isles*, given for the most part by those responsible for the excavations. In the summer term there was a companion series on *Recent Field Work in the Near East.*

Routine Work

Lectures and technical training for students continued to develop. The Repair Department and the Photographic Department worked to capacity throughout the year. Publications included the *Second Annual Report*, and the first of a series of Geochronological Tables, with the title of *An Attempted Correlation of Quarternary Geology, Palaeontology and Prehistory in Europe and China*, by Dr. Wen-Chung Pei. The expansion of the library continued, the most important accession being a number of works on Aegean Archaeology from the library of the late Mr. George Macmillan, presented by his son, Mr. W. Macmillan. During the summer, a large number of students received training in field-work on excavations supervised by members of the Institute staff.

The War Years

In September, 1939, all the activities of the Institute came to an enforced halt. The great majority of the students undertook immediately some form of national service. The Hon. Director joined up for military service, at first in Britain and subsequently in North Africa. The Secretary undertook full-time Red Cross work, but as this was in London, she was able to carry on the necessary routine business of the Institute and, by living in the Institute building was able to supervise A.R.P. arrangements. In 1942, when the Hon. Director was posted overseas, the Secretary was appointed Acting Director. All the other members of the staff undertook various forms of service, in Government scientific departments, in the R.A.F., on the land, and so on.

It was at first presumed that the Institute building would be commandeered. To clear the building for this purpose, and to safeguard the collections, the whole contents were packed up in the basement in one hectic week of work by the heroic labours of a group of staff and students.

The building remained vacant, with almost all work at a standstill, for the winter 1939–1940. In the spring of 1940, however, it was decided that portions might profitably be re-opened. The books were therefore replaced on the shelves, and the library once more made available. When air-raids subsequently developed, since it was apparent, with the closing of most of the public libraries in London, that a number of people would welcome an accessible archaeological library, and since no books of great intrinsic value were possessed, it was decided to continue this policy. The library thus remained open for the rest of the war, a policy which was justified by the use made of it.

The Geochronological Department under Dr. Zeuner and the Repair Department under Miss Gedye were also able to undertake some part-time work, carried out elsewhere by the courtesy of various institutions.

The Institute thus continued to carry out some minimum activities throughout the war. Though Regent's Park received a very full share of bombing, the Institute fortunately escaped a direct hit by either high explosives or incendiaries, though both fell in close proximity all round. The building thus survived, though with hardly any intact windows or ceilings, and with its outside walls thoroughly pock-marked, a state to which the sixteen flying bombs in the Park contributed in full measure. The worst inconvenience caused was the blocking of the main sewer by a bomb in the Inner Circle, which caused the flooding of parts of the basement, and which took many months to repair, since the damage was only located in the fourth pit dug, and the sewer lies at a depth of some 25 feet. A tribute must be paid to the devoted labours of Manson, the caretaker, in patching up the building, safeguarding the contents, and salvaging boxes out of sewage water, and who received an unpleasant wound from a bomb-splinter on the night of the worst raid in April 1941, which laid him up for six weeks.

In the course of the war, the Institute received a number of useful accessions from various sources, which were accepted and stored, though they could not be sorted or catalogued under existing conditions. The most important was a gift, mainly of Scandinavian stone implements from the Humbla Collection, by Dr. W. L. Hildburgh, which is of very great value for teaching purposes. The library benefited from gifts of books from the executors of the late Dr. Davies Pryce and the late Mr. R. A. Smith, and the latter gift also included a large collection of lantern slides.

As the war went on, it became apparent that there was even scope for lectures on a small scale, to which people turned only too willingly as relaxation from their war duties. In March and April, 1942, a series of three lectures on Turkish Archaeology was arranged at the Turkish House, and an exhibition, mainly photographic, was arranged in connection with this by Mrs. Maxwell-Hyslop.

The Institute was also responsible for preparing a photographic exhibition called "The Present Discovers the Past," all work in connection with which was undertaken by Miss M. Eates. Five copies were prepared, one of which was circulated by C.E.M.A. to museums and galleries, and four by A.B.C.A. to army units. One copy was on exhibition at the London Museum for some months in 1943, the exhibition being opened by the Earl of Harewood.

In 1943, the thoughts of many people were turning to post-war reconstruction, and it was felt to be apposite to gather together as many archaeologists as happened to be in this country for a discussion on the future aims and organisation of archaeology. A small organising Committee was formed, and under its auspices a Conference was held at the Institute from August 6th to 8th on "The Future of Archaeology." Papers were read on subjects connected with the contribution of archaeology to the post-war world, the future of archaeology both as regards planning of research and organisation, and training in archaeology both for archaeologists and for those connected with education. Two hundred and eighty-two persons attended, and it was generally felt that the Conference served a useful purpose. A full Report was published as *Occasional Paper No. 5 of the Institute.*

In February 1944, Dr. R. E. M. Wheeler tendered his resignation as Hon. Director of the Institute, on his appointment as Director-General of the Archaeological Survey of India. A tribute to his services to the Institute is included elsewhere in this Report.

Enquiries as to the possibilities of training in archaeology increased considerably in number during 1944, and though no regular courses of lectures could be arranged, a short introductory course on *What Archaeology Means* was held in April, 1944.

The Conference of 1943 was followed in 1944 by one on "The Problems and Prospects of European Archaeology." It was felt that the occasion was appropriate for this owing to the presence in England of a number of distinguished foreign archaeologists. Papers were read covering the major periods and areas of European Archaeology.

Attendance was again very good. A Report has been published as *Occasional Paper No.* 6 *of the Institute.*

The approaching end of hostilities in the spring of 1945 brought many enquiries from prospective students, and also brought the probability of an early resumption of field work on blitzed sites. In this connection, a course of lectures was given in March on *Excavation Technique on Romano-British Sites.* The Acting Director was released from the Red Cross in May, 1945, and resumed full-time work at the Institute. In the spring and summer, a considerable number of Institute members and prospective students gave part-time assistance on the excavation of bombed sites in Southwark, undertaken on behalf of the Southwark Excavation Committee by Miss Kenyon.

On the return of Bedford College to London in 1944 the Institute was glad to be able to offer hospitality to the English and Classics Departments, since the College buildings had been badly damaged by enemy action. All rooms not required by the Institute were therefore made available to the College, as well as a share in the use of the lecture room.

The Session 1945-46

THE foregoing report has shown how the Institute maintained some skeleton activities throughout the war, and was able to start on the post-war period with a nucleus of staff and a group of students, both new and some who had worked at the Institute before the war. The session 1945–1946, therefore, saw the resumption by the Institute of its normal University functions and the restoration of the building to something approaching its pre-war condition.

Recognition of the Institute as ranking for grant from Senate funds

During the period before the war, the Institute was still in an experimental stage, and, though accepted as a Central Activity of the University, was not eligible for any grants from Senate funds. The expenditure had, therefore, to be met out of income from the very limited endowment, from fees for tuition and services rendered and from subscriptions. The generous support of a number of benefactors, notably the late Mrs. Wharrie, the late Sir Charles Marston, the late Sir Robert Mond, Sir Percival David and Mr. A. L. Reckitt, and of a considerable body of subscribing members thus made the establishment of the Institute possible, but funds were nevertheless very limited for the work of a University institution, with the result that many activities were necessarily restricted, and in particular teaching had to be conducted on an honorary basis.

It had always been realised by the Management Committee that the Institute could not be run indefinitely on these lines, and it had been hoped that a period of operation in this manner would demonstrate its value as a University institution, and would qualify it for a grant from the Senate from funds received by the University from the University Grants Committee. When, therefore, the University was considering its post-war plans in 1943 and 1944, the Management Committee submitted to the Senate a scheme for the administration of the Institute and for providing the teaching in archaeology felt to be necessary by the Board of Studies in Archaeology, for which a

substantial grant would be necessary from Senate funds. The chief needs put forward were for a full-time Director, who would hold a professorial post, a full-time Chair in Prehistoric European Archaeology and part-time Chairs of Western Asiatic Archaeology, Indian Archaeology and Environmental Archaeology.

This scheme was in due course accepted by the University, and provision was made in the grant from the Senate for 1945–1946 for the post of Director, to be combined with that of Professor of Prehistoric European Archaeology, and for a Professor of Environmental Archaeology, as well as for the administration and technical departments of the Institute. Provision for the other two Chairs was made in the grant for 1946–1947.

Professor V. G. Childe, Professor of Prehistoric Archaeology in the University of Edinburgh, was appointed to the post of Director and Professor of Prehistoric European Archaeology, but was not able to take up duties until the session 1946–1947. Dr. F. E. Zeuner, Hon. Lecturer in Geochronology at the Institute, was appointed Professor of Environmental Archaeology from January, 1946.

Staff

A number of the pre-war members of the staff rejoined the Institute during the session. Miss Kenyon continued to act as Director for the year. Dr. Zeuner was able to resume part-time work as Hon. Lecturer in Geochronology, and in January was, as mentioned above, appointed Professor of Environmental Archaeology. Miss Ione Gedye returned to the Repair Department in August, but Miss Delia Parker was unfortunately not able to do so and her loss is much regretted. Mr. M. B. Cookson, who had been serving as a Squadron Leader in the R.A.F., was demobilised in the summer, and returned to take charge of the Photographic Department.

The development of the Institute rendered necessary the appointment of a full-time Librarian, and Miss Joan du Plat Taylor, F.S.A., was appointed to this post. It is most satisfactory that it is now possible to have a full-time Librarian, but tribute must be paid to those who previously gave their services voluntarily as part-time Librarians, Miss F. M. Patchett and, in earlier years, Lt.-Col. B. S. Browne. The most grateful thanks of the Institute and all who used the library are due to them. Miss K. M. Richardson, F.S.A., and Mrs. Maxwell-Hyslop, F.S.A., were appointed temporary Assistants respectively in the Departments of Western European Archaelogy and Western Asiatic Archaeology. Miss O. Starkey, who had pre-

viously worked in the Institute with the Wellcome-Marston Expedition, was appointed as second Assistant in the Repair Department. During the third term, Mr. Dudley Waterman acted as Assistant in the Drawing Department, and gave the course on *Archaeological Surveying*.

Teaching and Lectures

With the re-arrangements in the teaching of archaeology in the University involved in the new posts referred to above, teaching for the Diploma in Prehistoric Western European Archaeology became the responsibility of the Institute. Since the position of Professor in Prehistoric European Archaeology was not filled during the session temporary arrangements had to be made for the teaching. Under the general supervision of Professor B. Ashmole, for whose help in this matter the Institute is most grateful, teaching was carried out by Professor Zeuner, Mr. Stuart Piggott and the Acting Director.

During the session, the following courses were given:—

The Archaeology of Western Europe in the Prehistoric Period (3 terms), *Environmental Archaeology* (3 terms), *The Principles and Technique of Field Archaeology* (2 terms), *The Repair and Preservation of Pottery* (1 term), *Elementary Archaeological Draughtsmanship* (1 term), *Elementary Archaeological Surveying* (1 term), *Elementary Archaeological Photography* (1 term).

In addition, the following Public Lectures were given:—

La Grotte de Lescaux et sa Place dans l'Art Prehistoric Franco-Espagnol, by M. l'Abbé H. Breuil; *India and the Bronze Age Orient*, by Mr. Stuart Piggott, F.S.A.; *Air Photography and Archaeology*, by Dr. J. K. St. Joseph, F.S.A.; *A showing of the Ministry of Education's Film "Beginnings of History,"* with an introduction by Mrs. C. F. C. Hawkes, F.S.A.

Students

One student registered for a Ph.D. Degree before the war continued his registration. Eight students registered for the Diploma in Prehistoric European Archaeology. Of these, one sat successfully for the Diploma examination in June 1946. One student registered for the Diploma in Western Asiatic Archaeology.

In addition to the Diploma candidates, twenty-two other students attended one or more of the courses given.

Collections

The first task at the beginning of the session was to bring the collections up from the basement, where they had been stored throughout the war. In October, 1945, a large force of volunteers was assembled for a week-end, and the greater part of the cases and collections was brought up into the galleries. As a result of the energy of this party, and of Manson's ingenuity with improvised tackle, it was only necessary to employ professional removers to bring up the glass cases. For the next two months, the staff was busily occupied with re-arranging the exhibition cases and storage cabinets. The greater part of the collections survived the moves and the incidents of war very well, though there was a certain number of casualties from the collapse of ceilings and the vibration of near misses. The expense of the repair of these breakages, carried out by the Institute Repair Department, was met by War Damage Insurance.

The rest of the session was occupied with cataloguing the war-time accessions, and with continuing the cataloguing of the large collections, such as the Palestinian, which had not been completed when the Institute was closed down.

Library

Annual Report 1945-1946

THE Librarian was appointed on November 1st, 1945. During the year the Library was re-arranged on a new classified system. The small Library was made into a reading room with a few individual desks, and the British periodicals are housed on the shelves.

The lecture room now contains the main part of the library and also the foreign periodicals. Duplicate parts of periodicals, older runs and some of the less used books have been housed in a book store, and are available on application to the Librarian.

Catalogues

A classified sheaf catalogue has been prepared, following the headings of the general library arrangement, and a new typewritten author catalogue on cards has been prepared to conform with the new classified arrangement.

Binding

246 volumes, including books and periodicals, were bound and repaired.

Volumes Lent

963. May and June were highest borrowing months with 113 volumes; September the lowest with 27.

Volumes borrowed from outside Libraries and N.C.L.

30.

Volumes added to Library

565, making a total of 2,370.

LIBRARY

Pamphlets added

304, making a total of 594.

Periodicals added

168 volumes, making a total of 3,560 volumes in the library and 689 in stack.

99 surplus volumes were disposed of by sale and exchange.

Exchanges set up with Societies, etc.

25, of which 13 were added during the year.

Volumes presented to the Library

178 volumes were presented to the Library from the following donors:—

Miss D. Ashcroft
J. T. P. Burchell
Professor V. G. Childe
Miss Barbara Cooper
F. Cottrill
O. G. S. Crawford
H. A. Fawcett
Miss M. Flower
Professor J. Garstang
Miss Gotelee
Miss Keef
Sir Frederic Kenyon
Group Capt. G. Livock
D. Martin
C. D. P. Nicholson
Stuart Piggott
M. L. Randall
Miss V. Royds
A. Ruhlmann
Sidney Smith
F. M. du Plat Taylor

Pamphlets presented

304 pamphlets were presented to the Library from the following donors:—

J. T. P. Burchell
J. G. D. Clark
H. H. Coghlan
A. D. Lacaille
Mrs. Mackay
O. Myers
K. Oakley
Miss K. M. Richardson
Dr. F. E. Zeuner

Volumes deposited on indefinite loan

37 volumes were placed on indefinite loan in the library, by the following:—

Society of Antiquaries
O. Myers
Mrs. Young

Report of Repair Department

The Repair Department was able to carry out a small amount of work during the war, owing to the kindness of other institutions which provided accommodation. At the end of the war, Miss I. Gedye was able to obtain an early release from her work with the Foreign Relations Department of the War Organisation of the British Red Cross Society and Order of St. John, and resumed work at the Institute in August, 1945. Miss O. Starkey was appointed as the second assistant in place of Miss D. Parker in December, 1945.

During the year, the elementary one-term course on the Repair and Preservation of pottery was given to a class of students. One student completed the full advanced course for those undertaking technical work in museums. Other students began an advanced course spread over a longer period.

The principal work of the Department was concentrated on the repair of objects from the Institute collections which had been damaged during the war. A certain number of large pots were damaged by vibration and there were other casualties as the result of the moves, so that, though the proportion of the Institute collections damaged was small, there was a considerable amount of work for the Department.

Commissions also started to come in from outside persons and institutions. Altogether during the year, in addition to dealing with Institute material, work was undertaken for the following:—

Museums	2
Excavation Committees and Expeditions ..	5
Private individuals	7

A new development in the work of the Department has been the preparation of scientifically accurate models of pleistocene mammals. This work which was begun during the war, is primarily for the needs of the Geochronological Department and is carried out under the direction of Professor Zeuner. It is, however, hoped that, provided satisfactory arrangements can be made for casting at a reasonable cost, it will be possible to supply casts for the use of museums and schools.

The Department of Geochronology

Report for 1939-46

By Professor F. E. Zeuner

I. GENERAL REPORT

Activities

At the beginning of the war, the collections and much of the equipment of the laboratory were packed and moved into the basement. The library and sufficient equipment, however, were left in the workrooms in order to carry on with some of the work. By the end of 1940, air raid damage had made it impossible to continue in this manner, and permission was sought and obtained from Mr. W. N. Edwards, Keeper of Geology in the Natural History Museum, to do work for the Geochronology Department at the Natural History Museum. Thanks to this much appreciated hospitality it has been possible to keep some activities of the Department alive through the war, albeit on a much reduced scale, since other duties left but little time. In particular it was possible thus to deal with a certain number of research problems submitted and to answer other enquiries by letter. 624 letters were despatched during the war period.

In late summer, 1945, re-equipment of the rooms of the Department in the Institute was begun. The library was moved to the large room previously occupied by Bedford College, and a class-room added to the premises of the Department. The collections were unpacked, re-labelling started, and a number of field-trips undertaken to obtain supplementary material.

Staff

When the war began, Miss A. Gordon, who had been helping in the laboratory, resigned. For a period, Mrs. I. H. Zeuner continued to

assist, especially in keeping the card-index of geochronological literature up-to-date, but from 1941, until work at the Institute was resumed, no further assistance was available.

Laboratory

Owing to war conditions few additions were made to the equipment during this period. Air raids, however, caused some losses, mainly of glass-ware, since work in the laboratory was continued until December, 1940, when it became unusable. Much delay has been experienced in procuring new equipment after the war. A chemical bench was delivered in July, 1946, but could not be fitted until September. A second-hand Crouch microscope for polarised light and a large number of slides were acquired in 1946.

Collections

The teaching collections of the Department now comprise:—

An osteological collection.

A collection of important minerals and rocks.

A collection of flint and allied rocks, and of early man's methods of working flint.

A collection of charcoal and thin sections of European woods.

A collection of type-sections of deposits containing remains of early man.

The osteological and mineral collections have been enlarged by donations made by Mr. I. W. Cornwall. Miss M. S. Johnston, F.G.S., Kew Gardens, again contributed valuable specimens to the mineral collection, especially ring-shaped chert concretions from the Libyan desert, and a hand-axe made from one of them. An excellent complete collection of thin sections of woods from the temperate zone of Europe, each showing transverse, radial and tangential cuts, was acquired from Dr. F. Sleumer, and supplemented by others bought of Mrs. Pearson.

Exhibits

The exhibits of methods of soil analysis and geochronological methods were packed away at the outbreak of the war. Unfortunately they suffered so much that they cannot be used again without almost complete restoration, which will have to be postponed until exhibition cases become available.

THE DEPARTMENT OF GEOCHRONOLOGY

In 1939, work was begun on a series of reconstructions of animals contemporary with early man, and resumed in 1945. The following species have been completed: Woolly Rhinoceros, Merck's Rhinoceros, Mammoth, Straight-tusked Elephant, *Bison priscus*, Aurox, the Ice-age Elk (*Alces latifrons*) and Pleistocene wild horse. A series of $\frac{1}{2}$ inch to the foot models was made first, but a new set of 1 inch to the foot models is now being constructed. These models are intended as a teaching collection for the course on Environment of Early Man, and several of them will be incorporated in small dioramas which are being prepared. This work is being carried out in collaboration with Miss I. Gedye of the Repair Department.

Library

The departmental library has been increased by a magnificent gift of reprints made by Mr. J. P. T. Burchell, of Westgate-on-Sea. About 10 text books were bought.

The library of the Head of the Department has again been made available to the students.

Much use has been made of both parts of the library, especially since the provision of the class-room makes it possible to use books and reprints alongside with the collections.

II. TEACHING AND RESEARCH

Teaching

During the war, two students were given special courses in archaeology and physical anthropology in preparation for B.Sc. degrees.

In the autumn term of 1945 regular courses for diploma students were resumed, covering in four terms the fields of environment of early man and prehistoric chronology. They include elements of mineralogy and petrology from the standpoint of raw materials used by early man, Quaternary geology, mammalian osteology and human palaeontology, so far as required by students of archaeology. Furthermore, a course on the Palaeolithic was provided during the winter term.

The addition of a class-room to the premises of the Department has made it possible for students to study collections and literature at any time of the day.

THE DEPARTMENT OF GEOCHRONOLOGY

On May 18, 1940, the Geologists' Association was invited to the Institute for a demonstration of Mr. G. P. O'Brien's collection of Stone-age implements from Uganda which had been presented to the Department, and of other Palaeolithic material from Italy and Jersey.

Thirteen other lectures were delivered outside the Institute.

Enquiries and Research connected with Excavations

Enquiries, mostly requests to study sections and soil samples, to determine materials composing objects, also bones, charcoal and other organic remains have been received at the following rate:—

1939	36	enquiries
1940–1944	48	,,
1945	15	,,
1946	11	,,

The following reports have been published:—

1. Excavations at Quarley Hill, 1938. Report on soil samples.—*Proc. Hampshire Field Club archaeol. Soc.*, **14** (2): 193, 1938. (Submitted by Mr. C. F. C. Hawkes).
2. The Bury Hill Excavations, 1939. Report on Soil Samples.—*Proc. Hampshire Field Club archaeol. Soc.*, **15** (1): 50–52, 1939. (Submitted by Mr. C. F. C. Hawkes.)
3. Geology of the sections in the Mumbwa Caves, Northern Rhodesia.—*Trans. R. Soc. S. Afr.*, **29** (3): 149–153, 1942. (Submitted by Mr. J. Desmond Clark.)
4. Charcoal and Soil Samples from Bronze Age Barrows at Beaulieu Heath, New Forest.—*Proc. prehist. Soc.*, 1943: 25–27. (Submitted by Mrs. C. M. Piggott.)
5. Report on Shell Fragments found in Grooved Ware Sherds at Hills Road, Cambridge.—*Antiq. J.*, **23** (2–1): 14, 1943. (Submitted by Mr. D. H. S. Frere.)
6. Geological Report on the Excavations of the Saxon Burial Boat at Sutton Hoo. —*Antiq. J.*, **20** (2): 149, 1940. (Submitted by Mr. C. W. Phillips.)
7. Samples of Soil from the East Circle, Fowlis Wester.—*Proc. Soc. Antiq. Scot.*, **77**: 183–184. 1944. (Submitted by Mrs. Alison Young.)
8. Climate of the Sub-Boreal Phase of the Post-glacial, and other reports on Maiden Castle.—*Rep. Res. Comm. Soc. Antiq.*, **12**: 24, 25–27, 140. (Submitted by Dr. R. E. M. Wheeler.)
9. Early Hebrew Weights found at Lachish.—The weights in grammes, specific gravity, and rocks used in the manufacture of these weights were determined. Results incorporated in D. Diringer, *Palestine Expl. Quart.*, 1942: 82–103.
10. Bronze Age Tumulus on the Shield Knowe.—Determination of a wooden object found in tumulus. Included in K. S. Hodgson, Some Excavations in the Newcastle District. *Trans. Cumb. Westmorl. ant. arch. Soc.* (*n.s.*), *60*: 154–166, 1942.
11. Cornish Bronze Age Pottery.—Report on climatic conditions. Included in F. Patchett, *Arch. J.*, *101*: 17–49, 1946.
12. The Roman Villa at Park Street, near St. Albans.—Report included in Helen E. O'Neil, *Arch. J.*, *102*: 21–110, 1947. See this report, p. 25.

Selection from Reports completed but unpublished:—

1. Soil Samples from the Caburn Earthwork, 1939. (Submitted by Mr. A. E. Wilson.)
2. Samples of Deposits from Graves in Cyprus, 1939. (Submitted by Mr. J. B. R. Stewart.)
3. Soil Samples from the Barrow at Howlgate Farm, Pickering, 1940. (Submitted by Miss Websford.)
4. Soil Samples from Cassington Barrow, 1944. (Submitted by Mr. J. R. C. Atkinson.)
5. Samples of Wood from the Ballodoole Viking Boat, Isle of Man, 1946. (Submitted by Dr. G. Bersu.)
6. Samples of Wood from the Viking Burial, Cronk Moor, Jurby, Isle of Man, 1946. (Submitted by Dr. G. Bersu.)
7. The Beds containing the Palaeolithic Horizons at Tell-el-Kebir, Sahara, 1946. (Submitted by Mr. Oliver Myers.)
8. A Fossil Fragment of a Human Skull from the Wallbrook Valley, found by Mr. Terence H. Gould, 1944. See this report, p. 8.

Other Research

The methods of geochronological research and their bearing on Palaeolithic, Mesolithic and Neolithic dating, have been described in *Dating the Past* (1946).

Pleistocene chronology has been discussed in detail in *The Pleistocene Period* (1945).

The Neolithic–Bronze Age land surface at Walton-on-the-Naze, Essex, and deposits of similar age in Bideford Bay, North Devon, were investigated. (See *Dating the Past*, pp. 94, 97.)

The terraces of the Rhine between Lake Constance and Basle were analysed in conjunction with Mr. Day Kimball, with the view to obtain evidence for the age of the Magdalenian, and the results published as *Occasional Paper No. 7 of the Institute.*

The terraces of the Nile have been studied on published records and cartographic material, in conjunction with Mr. Day Kimball. Evidence for Pleistocene sea-levels was found on the coast of Arabs Gulf, west of the Delta. For this area, Mr. R. F. H. Summers, who spent two years there during the war, provided most valuable evidence confirming our results which were largely derived from a morphological analysis based on maps.

Results of work on the Thames terraces, begun with a Leverhulme Studentship of the London Museum, have been incorporated in *The Pleistocene Period*. Since then the writer has joined forces with Mr. Day Kimball, and a joint publication is in active preparation.

THE DEPARTMENT OF GEOCHRONOLOGY

In 1938, the Pleistocene deposits of Jersey were studied, following an invitation by the Société Jersiaise. Four papers have been prepared and published on this subject in the period under review.

Research on Pleistocene Mammalia—the big game of Palaeolithic man—has been carried out at intervals throughout the period, in connection with the construction of the small-scale models. Miss Ione Gedye has been most helpful on the technical side of this work, on which three papers have so far been published.

The following papers and books contain the results of the investigations reported upon:—

1938. Chronology of the Middle and Upper Palaeolithic, especially in the Mediterranean Region.—*Rep. Brit. Assoc. Adv. Sci.*, **108**: 472–473.
1939. Climatic Fluctuations in the Mediterranean.—*Geol. Rundschau*, 1939.
1940. A new subspecies of Red Deer from the Upper Pleistocene of Jersey, Channel Islands.—*Ann. Mag. nat. Hist.*, (11), **5**: 326–328.
1940. (Same title). *Bull. ann. Soc. Jersiaise*, **14** (1): 27–30.
1940. The Age of Neanderthal Man, with Notes on the Cotte de St. Brelade, Jersey, C.I.—*L.U. Inst. Arch. Geochron. Table*, **2**: 18 pp.
1942. Pleistocene Stratigraphy.—*Proc. Geol. Assoc.*, **53**: 35–37.
1944. Homo sapiens in Australia contemporary with Homo neanderthalensis in Europe.—*Nature*, **153**: 622.
1944. Reconstruction models of Pleistocene Mammals.—*Proc. Geol. Assoc.*, **55**: 118–119.
1944. New Reconstructions of the Mammoth and the Straight-Tusked Elephant.—*Proc. Linn. Soc. Lond.*, **155**: 245–251.
1945. *The Pleistocene Period.* Its Climate, Chronology and Faunal Successions.—322 pp. (Quaritch) London.
1945. Review of the Chronology of the Palaeolithic Period.—*L.U. Inst. Arch. Occ. Pap.*, **6**: 14–19.
1945. New Reconstructions of the Woolly Rhinoceros and Merck's Rhinoceros.—*Proc. Linn. Soc. Lond.*, **156**: 183–195.
1946. Time and the Geologist.—*Discovery*, **7** (4): 104–112.
1946. *Dating the Past.*—444 pp., 24 pls. (Methuen) London.
1945. *Cervus elaphus jerseyensis*, and other Fauna in the 25 ft. Beach of Belle Hougue Cave, Jersey, C.I.—*Bull. Ann. Soc. Jersiaise*, **14** (6): 238–254, 4 pls.

Geochronological Tables

Under this title, three papers have been published in the *Occasional Papers* of the Institute. This series is intended to provide chronological information in a concentrated form, preferably by the use of tables, together with bibliographies on the chronology of areas and periods, and a discussion of the evidence.

Geochronological Table No.	*Title and Author*
1.	Pei, Wen-Chung, 1939. An Attempted Correlation of Quaternary Geology, Palaeontology and Prehistory in Europe and China. 16 pp.
2.	Zeuner, F. E., 1940. The Age of Neanderthal Man, etc. 18 pp.
3.	Movius, H. L., Jr., 1940. The Chronology of the Irish Stone Age. 22 pp.

Soil Sections at Park Street Villa, St. Albans

The excavations carried out by Mrs. B. H. St. J. O'Neil on the Roman villa at Park Street, St. Albans, afforded an opportunity to investigate soil sections dated by archaeological evidence. It is important to collect as much evidence of this kind as can be obtained, in order to find how much soil is liable to form in certain periods of time, since when a sufficient number of data of this kind has been collected it is hoped that it may be possible to estimate the time which elapsed between successive occupation phases, provided the sections include buried soils.

Two sections were studied, both on rubble from a wall of the "fourth period" of the buildings, which, according to Mrs. O'Neil, was erected to block the cellar after A.D. 340. This date was established on coin evidence. The vegetation on the surface is now grass, but there are clear traces of earlier ploughing. The surface is almost level, being that of a gravel terrace of the river Ver. The gravel is almost entirely composed of flint.

Section A

Depth	*Thickness*	*Composition*	*pH*	*Lime*
	0	surface	7·0–7·5	—
0				
	20 cm.	greyish-black sand with humus and pebbles	8·0	present
20 cm.				
	25 cm.	buff-grey sandy rubble	8·0 or slightly more at 30 cm.	present
45 cm.				
	30 cm.	brown silt yellow silt (terrace floodloam)	8·0 at 60 cm.	little or none
75 cm.				
	↓	gravel	—	none

This section shows building rubble down to 45 cm., superimposed on the natural, pre-Roman soil profile. The rubble contains lime, mostly derived from the chalk used for building purposes. It is interesting to note that some lime has infiltrated into the underlying, lime-free layer to a depth of a little over 15 cm., but its distribution is patchy, and the quantities are quite small. Decalcification of the top-soil has hardly commenced. The reaction at the soil surface itself is neutral, but otherwise the building rubble is still very rich in lime, and decalcification has hardly begun. The development of a humic A-horizon is, however, clearly indicated down to a depth of 20 cm. These changes are the effect of, presumably, about 1,600 years of exposure.

SECTION B

Depth	*Thickness*	*Composition*	*pH*	*Lime*
	18 cm.	Ploughed, brownish-black sand with humus and pebbles	Under 7·0 at 5 cm.	none
18 cm.				
	17 cm.	Brown loam with few stones	Slightly over 7·0 at 25 cm.	none
35 cm.				
	25 cm.	More stony, greyish-brown loam with Roman bricks	Slightly over 7·0 at 44 cm.	none
60 cm.				
	30 cm. or more	Yellowish-brown silt (terrace floodloam)	under 7·5 at 63 cm.	none
90 cm.				

The building rubble in this section (from 35–60 cm.) appears to have contained little or no lime. No noticeable traces of calcium carbonate are now left anywhere in the section, the upper part of which consists of silt moved from elsewhere in the neighbourhood. The subsoil is undisturbed floodloam. Here, again, the visible humification of the A-horizon goes down to 18 cm. (compared with 20 cm. in Section A). One might have expected some podsolization on this material, but the pH-values do not suggest any. This profile, also formed in about 1,600 years, appears to be an incipient brown-earth.

Fragment of a human skull from the Wallbrook Valley, City of London

This fragment was submitted by Mr. Terence H. Gould for examination. It is an almost complete and remarkably thick frontal of a male *Homo sapiens*, and its state of fossilisation is comparable with that of Pleistocene bones as found in Thames deposits. It does not suggest a Holocene age. The geological position of the find, however, is ambiguous, owing to the conditions under which it was retrieved. But since this specimen came from a place only about 1,000 yards N.W. of "Lloyds," the site of the London Skull (a female), and is possibly derived from the same, Upper Floodplain, Terrace, circumstances of the find and a short description may here be placed on record.

The fragment was found during the war when shafts were excavated under the building of the Western Union Telegraph Co., at 22, Great Winchester Street, close to London Wall and near the Wallbrook. Mr. Gould has installed a small but instructive Museum mostly of Roman finds, in Western Union House, and the skull fragment is kept there also.

Six shafts were sunk, about 25 feet south of Great Winchester Street, aligned from West to East (except B, see below). Mr. Gould watched the excavations as best he could in his spare time, and from his observations and the reports of the workmen the following picture can be reconstructed.

Shaft A. Bottom filled with water at 19 ft. (all depths below street level).
Shaft B. 8 ft. N. of Shaft A. The strata were dipping as though a cavity beneath had collapsed. A perfectly squared, black wooden pile seen. Wet at 20 ft.
Shaft C. 16 ft. E. of Shaft A. Black wet clay throughout, no water. "Mass of unhewn stone near bottom" (? septaria). Roman first century pottery at 24 ft. Fragment of wood (sweet chestnut) at unknown level.
Shaft D. 4 ft. E. of Shaft C. Black clay with Roman finds down to 24 ft., then traces of a vegetation layer looking like matted grass. Below this grey-blue clay, probably London Clay.
Shaft E. 40 ft. E. of Shaft D. 17 ft. deep. "Gritty dirt." Skull fragment found here.
Shaft F. 14 ft. E. of Shaft E. 21 ft. deep. Red gravel (? Upper Floodplain Terrace). No finds.

Shaft F must be situated extremely close to a well shown on Sheet N.v. S.E. of the 6-inch geological map of the London District, which records London Clay at + 18·5 ft. O.D., under 1·5 ft. of gravel and 5 ft. of made ground. The same map shows two other wells in the

neighbourhood, one 500 ft. S. (London Clay at + 7 ft. O.D., gravel 26, made 7) and the other 500 ft. N.E. (London Clay at + 17·5 ft. O.D., gravel 8·5, made 9).

According to the 6-inch map, the site lies in the alluvium of the Wallbrook, on the eastern flank which rises to the Upper Floodplain Terrace. This appears to be confirmed by the shafts. London Clay seems to have been struck at 24 feet below street level in Shaft D, and the "stone" which may have been a septaria, in Shaft C, only 4 ft. from Shaft D, may be taken as confirmatory evidence. At 24 ft. below street-level, Shaft D showed traces of a land surface, and much of these 24 ft. appear to have been Roman and later material, occupation rubbish mixed with alluvial mud. Shaft E, 40 feet east of the first four, still contained a "gritty dirt" of alluvial appearance. But Shaft F stands already in the gravel of the Pleistocene Terrace, so that the edge of the Wallbrook Valley must have run between Shafts E and F.

The skull-fragment came, according to the report which Mr. Gould received from the man to whom the fragment was handed by the workman who found it, from Shaft E. This has been confirmed by one of the electricians who were present at the time, and its correctness is borne out by the traces of earth which still adhere to the fragment. They are mostly of a light grey colour, clay, with numerous sand particles. (In addition there are a few yellow patches suggestive of derivation from the nearby terrace gravel of Shaft F.) It should, however, be mentioned that another report, supplied from memory about three years after the find was made, placed it in Shaft C, which had produced a number of Roman relics. But this shaft contained nothing but "black clay," of which no trace is to be seen on the fossil.

If the fragment is Pleistocene, it may have been derived from the gravel found in Shaft F, and re-deposited in alluvial mud.

The geological evidence thus cannot be considered as satisfactory. As to the fragment itself, Dr. J. S. Weiner, of the Department of Human Anatomy, Oxford University, very kindly made it the subject of a careful examination on which he submitted the following report:

"The bone is in two unequal pieces, which, however, fit accurately. Nearly the whole frontal is available except for a triangular piece on the right side and, unfortunately, also for nearly the whole glabellar region and the pars nasalis. The degree of development of the supra-orbital edges, temporal lines and zygomatic arches, together with the general thickness of the bones, suggest that the

specimen may be male; but this opinion is little more than a guess. The question of age is referred to below.

"The general features of the specimen can easily be matched with male specimens of modern man. This applies also to comparisons of measurements such as the minimum frontal width taken between the temporal crests, the transverse diameter between the outer edges of the zygomatic processes, the sagittal 'arc' from the bregma to the most anterior point (this is arbitrary but can be placed on other frontal bones for comparison).

"There is nothing out of the ordinary in the forehead region; the superciliary arches and the supraorbital margin show no excessive development. The slope, fulness and 'bossing' of the forehead are not unusual, and there is no tendency to any side-to-side narrowing.

"On the endocranial surface, the frontal crest is well developed and the Pacchionian depressions are well marked. The impressions of the meningeal vessels are distinct but not unduly deep. The latter circumstance suggests a not too late 'middle age' for the specimen, though the Pacchionian depressions suggest a somewhat older age. The character of the coronal suture is here of interest—the denticulations are well preserved, but there is some suggestion of the beginning of obliterations medially, and also in the endocranial suture line. On the whole the age may be said to lie between 30 and 50 years.

"The most interesting feature of the specimen is its thickness, which appears somewhat greater at the coronal suture than the usual run of male specimens. It is of interest to note that the thickness at the coronal suture is on the whole slightly greater than that of the Swanscombe parietal at its coronal suture. It may be recalled that the thickness along the coronal suture, as in other situations in the two Swanscombe fragments, was regarded as rather unusual by one of the writers of the report on Swanscombe. This fact, it was suggested, made it not unlikely that, in spite of the essential modernity of the parietal and occipital, the missing frontal might also show unusual thickness, perhaps of a Neanderthaloid character—witness the Steinheim skull. The evidence, so far as it goes, of the present frontal bone, with its thickish coronal border and 'normal' supraorbital region, serves, I think, to indicate that this speculation is not well founded.

"To that extent, the present frontal serves at least as a comment on a rather important point about Swanscombe."

Report of the Photographic Department

Session 1945-46

THE Photographic Department had closed down completely during the war, owing to the absence of Mr. M. B. Cookson on national service. Fortunately, his demobilisation from the R.A.F., with which he had been serving in the India-Burma war, was due shortly after the end of hostilities, and the Department was therefore able to re-open at the beginning of the autumn term.

Contact was made with wholesalers and orders for materials were placed by Mr. Cookson while in India, and on his return to England, sufficient material and equipment were waiting ready for a start on his release from the R.A.F. This took place on October 8th, 1945, and by October 16th, work on the cleaning up and refitting of the Studio had started.

The equipment, which had been stored at the Institute during the war, was refurbished as quickly as possible, and the Department was soon fully employed. An immediate urgent task was the building up of the Institute's lantern slide collection, for a number of new courses not hitherto held at the Institute required the addition of some hundreds of slides during the year for teaching purposes. The teaching programme also involved attendance at all the Institute lectures to take charge of the lantern.

A considerable amount of work was undertaken for official bodies, such as Museums, involving visits to various Galleries and Collections. Other Institute work resumed was photography for a pottery corpus which had been in progress in 1939. This task necessitated working from line drawings and from original pots in the Institute's collection, all to a set scale. It is carried out in between main tasks, generally as term ends and is regarded as a stock task that must be proceeded with at every available opportunity but loses its priority as a task when ordinary commitments arise.

Very quickly, it seemed, various Institutions, Colleges and private individuals were resuming archaeological activities and many

were requiring photography and lantern slides with some degree of urgency. These various small commissions were executed with a speed which caused a pleasant surprise in a clientele that had long been used to waiting a considerable time for work or doing without.

As students returned to the Institute, the normal teaching courses were resumed. A number of students also sought advice in photographic matters, camera purchase, preparation of originals for plates, assistance with the treatment of poorly-exposed films, etc.

The year was thus a very full one, and the amount of work involved, particularly in the matter of the preparation of lantern slides, rendered necessary the employment of a junior assistant towards the end of the year. Details of the work executed are appended at the end of the report.

For the future the following developments are planned:—

(*a*) The construction of a mock site of earth in which are hidden potsherds, iron implements, etc., which students can excavate, practise preparation for photography and the photography of finds *in situ*.

(*b*) The establishment of a "miniature" room, to be used for Leica and small camera users and also as a student darkroom.

(*c*) The purchase (when available) of further lighting equipment, such as "floods" and a spotlight, and of cameras for student training.

(*d*) The making of models to demonstrate lighting photography for the air (in progress).

(*e*) Lastly, subject to normal photographic commitments, experiments in colour photography with transparencies and colour prints by dye-transfer, with a view to investigating if this much-needed type of work can be executed at a price to make it practicable.

Record of Work Carried out 1945–1946

	Number
Private clients	38
Institutions, small schools, etc.	5
Museums, Colleges, Universities, etc.	9
Government Departments	2
Excavation Committees	6
Lantern slides for Institute of Archaeology, Society of Antiquaries, private clients	1350 approx.

Prints and enlargements from Institute's and client's negatives	3500 approx.
Tuition	one class of 6
Private tuition	2
Lectures requiring lantern	150

Additions to Existing Equipment

1. Rotary glazing machine (Kodak)
2. Envoy Enlarger (miniature)
3. Professional printing machine.
4. Sundry odd items as replacements:—
   e.g. measures,
   safe-lights,
   drying racks, etc.
5. The addition of a changing room built by staff.

Dr. R. E. M. Wheeler

HONORARY DIRECTOR OF THE INSTITUTE, 1935–44

THE Institute suffered a very real loss when in 1944 Dr. Wheeler tendered his resignation to the Management Committee on his appointment as Director-General of the Archaeological Survey of India. To Dr. Wheeler and to the late Mrs. Tessa Wheeler the Institute owes its existence, and under Dr. Wheeler's direction it so developed in what may be called its probationary period in the pre-war years that the University has now accepted its value as a permanent part of the University activities.

Dr. Wheeler's first teaching post in the University was as a part-time lecturer in British Archaeology at University College. Both he and Mrs. Wheeler, however, with their great experience of would-be archaeologists on the numerous excavations they conducted, realised the need for greatly increased facilities for the teaching of archaeology in the University. A scheme for a centre of training in London was mooted as long ago as 1927. For the next few years, Dr. Wheeler worked steadily to secure the views and advice of his colleagues in the archaeological world, and, when assured of their support, to interest the University in the idea. The patient work and driving enthusiasm involved in this will be appreciated by all who have had a share in launching a big enterprise, and resulted in 1932 in the establishment of an Appeal Committee with the approval of the University.

Four years hard work were still required to bring the Institute into corporate existence. A sum of money, considerable for a subject of rather limited appeal such as archaeology, was secured as the result of the appeal, and various schemes for a suitable building for the Institute, pending an eventual home in the central University buildings, were considered. In 1934 there were two important developments. St. John's Lodge, Regent's Park was suggested as a possible headquarters, and the late Mrs. Wharrie, interested both in the fate of St. John's Lodge and of Sir Flinders Petrie's collection of Palestinian finds, offered a sum sufficient to enable the Institute to make

use of this building. So, after complicated negotiations with the Commissioners of Crown Lands, the Ministry of Works, the University and legal representatives, the Institute entered into possession of its present quarters as a recognised central activity of the University.

This brief outline of the genesis of the Institute will show how the untiring work, patience and enthusiasm of Dr. Wheeler, nobly supported by Mrs. Wheeler, were entirely responsible for bringing the Institute into existence. A survey of the documents relating to this period shows how many were the difficulties which had to be overcome, and the skill and determination with which each was met.

Dr. Wheeler inevitably became the first Director of the Institute, a post which he held in an honorary capacity and to which he gave much hard work in spite of his numerous other obligations. His teaching of students in European Archaeology was still carried on in his capacity of lecturer at University College, but he devoted himself to establishing at the Institute the working collections and library required for the teaching of archaeology, and to setting on the right lines the teaching of archaeological technique concentrated there, a task for which he was peculiarly qualified owing to the high standards of his archaeological field work.

In the years 1936 to 1939 the Institute was thus set on its feet under Dr. Wheeler's inspiring guidance. A generation of young archaeologists worked under him both at the Institute and in the field, and their mark on both British and overseas archaeology is now being clearly seen.

During this period the Institute, though recognised as a University institution, was not in receipt of any grant from University funds. With the resources collected by the Appeal Committee, with the support of subscribing members, with the fees received for tuition and services rendered, and with the help of many who, like Dr. Wheeler himself, gave their services voluntarily, a full programme was organised, with the result that when the post-war programme of the University was decided upon, the value of the contribution of the Institute to the teaching and research activities of the University was accepted, and the Institute was recognised as ranking for grant from University funds.

With this, the Institute entered into a new phase of its activities, and it was with this successful culmination of his project that Dr. Wheeler terminated his connection with the Institute as its Honorary Director. In February, 1944, he tendered his resignation to the Management Committee on accepting the Appointment of Director-

General of the Archaeological Survey of India. It was most satisfactory to the Management Committee that Dr. Wheeler could leave with the feeling that the institution of which he was the virtual founder was at last firmly established, but it was with very great regret that they accepted the necessity that he could not guide it on the next stage in its career. Every best wish of the Management Committee and of all connected with the Institute goes with Dr. Wheeler on the new task he has undertaken.

Sir Charles Peers

Chairman of the Management Committee, 1934–1945

In 1945 the Management Committee reluctantly acceded to the request of Sir Charles Peers, already made on a number of occasions, to accept his resignation from the Chairmanship of the Committee.

Sir Charles had been associated with the Institute from the inception of the scheme, and, as then President of the Society of Antiquaries, had headed the signatories of the appeal for funds for its foundation as Chairman of the Appeal Committee. He became the first Chairman of the Management Committee when it became an official University body, and guided its policy through the difficult initial years. His active interest was a real encouragement to all concerned with the administration, and his tact and great experience of public matters were of inestimable value in all the preliminary negotiations. His advice as an architect was invaluable in the matter of reconditioning the Institute and, latterly, on the question of damage to the structure from enemy action.

He had the satisfaction, as did its first Director, of seeing before he retired as Chairman the Institute firmly established with a useful career in front of it. The Institute owes him a very real debt of gratitude.

India and the Bronze Age Orient

By Stuart Piggott

THE recognition of a prehistoric culture in north-west India was first made possible by the spoliation of Harappa to obtain bricks to build the railway line to Lahore in the nineteenth century, and the potential significance of the seals then found was really appreciated by Sir Alexander Cunningham, the then Director General of Archaeology in India. But it was not until the large-scale excavations of Mohenjo-daro by Marshall and Mackay, published in 1931 and 1938, and Vats' work at Harappa published in 1930, that the details of the very remarkable Bronze Age civilisation in the Indus Valley and the Punjab were apparent. In the meantime, explorations by the late Sir Aurel Stein in Baluchistan, published in 1929–31, and Hargreave's excavation at Nal in the same region in 1925 showed that there were in these mountainous regions further cultures, less complex and more barbarous than that of the Indus, but sharing certain points in common, and Majumdar made very important surveys in Sind in 1927–31. But this material was largely undigested until Professor Childe made his fundamental studies of it in 1933 and 1934, which remain the basis of all subsequent discussion. The recent work of the French and Americans in Iran has, however, produced a mass of comparative evidence not available to Childe when he wrote, and the sites of Tepe Giyan, Tepe Sialk, Tepe Hissar, Turang Tepe and Tal-i-Bakun are available for study, as well as that obtained by the Swedish excavations at Shah Tepe, and this new material can be taken into conjunction with the older finds at Susa. In Iraq, too, much work has been done which ultimately bears upon the Indian problem, notably Frankfort's discoveries in the Diyala region. With this in mind, I attempted a preliminary synthesis of the prehistoric Indian material while I had an opportunity to see material and sites at first hand in the course of military duties in India during the 1939–45 war. It is hoped to publish a full account in conjunction with Dr.

Donald McCown under the auspices of the Oriental Institute of Chicago in the near future.[1]

A natural geographical area of some importance is contained in the region bounded on the west by Tigris-Euphrates valleys, on the east by the Indus, with its northern and southern boundaries respectively being the Oxus (Amu Darya) and the shores of the Persian Gulf and the Arabian Sea. The central area is that of the great deserts of the Dasht-i-lut and the Dasht-i-Kevir, where ancient occupation has only been identified in the Helmund Oasis in Sistan, but in the mountainous and difficult country to north and south a number of most ancient village and town settlements have been discovered. On some of these sites, represented today by "tells" of accumulated debris, the lowest levels have yielded evidence of some of the most ancient agricultural settlements known—Hassuna in the Mosul region or Sialk near Kashan, for instance. Here the earliest occupation on the sites may go back beyond the fifth millenium B.C., and by the fourth millenium a number of simple peasant settlements—villages or small country towns—can be identified, in Iran stretching southwards to the Fars province, and northwards into the confines of Russian Turkestan at Anau near Ashkabad. Eastwards of this site the country, largely occupied by the state of Afghanistan, is archaeologically unexplored, but in Baluchistan analogous peasant communities can be traced from the Zhob Valley in the Fort Sandeman district southwards to Las Bela state, and in British Makran similar sites occur up to (and over) the Iranian border.

The problem before us at the outset is to attempt to set the Baluchistan material in some sort of relationship to the cultural and chronological sequence worked out for Iraq and Iran, and to try to determine the relationships in time and space of the local cultures within Baluchistan itself. Further, eastwards in the Punjab and the Indus Valley are the remains of the truly urban, literate, civilisation of the Harappa Culture, which in Sind at least comes into relationship with simpler cultures of Baluchi origin or connections—here again a correlation needs to be effected between the various cultures within India, and their chronological place fixed.

At this point it is convenient to sound a warning note. The evidence does not suggest that the Indian cultures are ultimately of

[1] For references to published material, see Piggott, "The Chronology of Prehistoric North-west India," in *Ancient India*, No. 1 (1946). Unless otherwise indicated, all the points made in this lecture are documented in this study.

independent origin from those of the west, and in fact some appear linked in such a way as to suggest actual derivation. But Baluchistan, and still more the Punjab and the Sind Desert, are peripheral with regard to the centres of the most ancient civilisations as known at present, and we must remember the "zoning" of cultures outside their areas of primary origin so clearly demonstrated, for instance, in East and Central Europe in its relationship to the Ancient Orient. When considering the Indian cultures it is salutary to remember sites like Vinča or Dimini.

As has recently been shown by McCown in his synoptic treatment of the Iranian cultures, the painted pottery common to all sites under consideration at about the end of the fourth millenium B.C. falls into two main groups—wares on which the pattern is painted in black on a buff ground, and those on which the background is a strong red slip. The distribution of these two groups is geographically distinct, the red wares being northerly, and the buff wares having a southern distribution, and this duality is immediately apparent when we study the Baluchistan cultures and their pottery, where the Zhob Valley sites yield black-on-red sherds, those of South Baluchistan, black-on-buff. This distinction is reinforced by the types of clay figurines of women (perhaps goddesses from household shrines) from the two regions, which again fall into two sharply contrasted stylistic groups.

In addition to this main grouping, the broken character of the country produces, as might be expected, local "schools of painting" peculiar to particular valleys or restricted areas, so that perhaps six or seven different cultures can be distinguished sharing basic features but with strongly characterised local peculiarities which may sometimes at least reflect differences in date. All sites have in common the background of an agricultural economy based on mixed farming—pastoralism may have been predominant but can hardly have been accompanied by nomadism, for the settlements were sufficiently continuously occupied to pile themselves up into respectable "tells." The presence of humped cattle is abundantly proved by their frequent representations as clay figurines or on pot paintings. The villages or small towns seem to have been of closely crowded houses of stone or mud walls, or mud on stone footings—mud bricks of certain standard sizes were also used, and white wallplaster was found at more than one site. Upper floors or flat roofs are implied by the remains of stairs, and roofing or floor beams were preserved by carbonisation at Nal. At all sites there was abundant painted pottery, often wheel-turned, the

painted ornament frequently being carried out in two colours (black and red) or several (blue, green and yellow were employed at Nal in addition to black and red). Copper tools and ornaments occur, all of simple forms—the shaft-hole is never used as a hafting technique—although there is a quite sophisticated copper mirror from South Baluchistan, with the handle formed of a stylised female figure whose "head" is provided by the reflection of the user's own features! At some sites in the Zhob Valley and in Sind flint and chert blades occur in some quantity and metal appears to be absent. The figurines of women and animals have already been mentioned, and stamp-seals are virtually absent, and where present seem always to be chronologically very late in the sequence of cultures.

It is only necessary to comment on one or two of the regional variants of this culture, distinguished almost entirely on the grounds of pottery. Near Quetta several sites have produced (on the surface of the tells) a distinctive buff ware with a bold, free, monochrome style unlike anything else in Baluchistan but having very pronounced similarities to the pottery from Tal-i-Bakun (Persepolis) in southern Iran. If this stylistic equation also carries with it implications of a parallel date, the Quetta pottery should be a good claimant for the earliest known from India, for the Bakun site is of extreme antiquity, but one must not forget the relative geographical position on the two places and the distances involved.

In the Zhob Valley, certain sites, notably Sûr Jangal and Râna Ghuṇḍai,[1] have produced a most interesting series of pots decorated with very conventionalised representations of humped bulls and black buck. Both in the style of animal drawing, and in the actual pot forms, there is a striking resemblance to pottery from the first settlement at Tepe Hissar near Damghan. Again the distance is enormous, and the divergence in actual animals represented in the two sites (there are no bulls at Hissar I) suggest parallel developments rather than a direct relationship, but the kinship of this Zhob Valley ware to that of north Iran seems certain. The first Hissar settlement must go back to a period well before 3000 B.C., and be approximately contemporary with Al 'Ubaid in Iraq, but again we cannot be sure that the Baluchi finds are not considerably later.

South Baluchistan produces evidence of a culture which has

[1] Important evidence from Râna Ghuṇḍai, published since my paper cited above, is contained in E. J. Ross and D. McCown, "A Chalcolithic Site in Northern Baluchistan," in *Journ. Near Eastern Studies*, V. (1946), 284–316.

important links with the west which seem to attest actual contemporaneity in the two regions. This culture, well represented at the site of Kulli, has an entertaining type of decorated pottery in which fantastically elongated cattle stand in a stylised landscape with spiky trees: the design is painted in black but often flanked by broad red bands. Now in Early Dynastic Sumer, at a date about 2800 B.C., a type of pottery ("Scarlet Ware") was being made in the Diyala region (and it turns up also in Khuzistan and Elam), with very similar "landscape-and-animals" scenes painted on in black and scarlet—there is not identity between these vessels and those from Kulli, but some form of contact seems inevitable. Also in the Kulli sites are fragments of steatite vessels with carved surfaces which are exactly paralleled in Early Dynastic Sumerian sites and again in the Makran (which may be their place of origin, though unfinished specimens in Kulli sites suggest that some were manufactured further east), and these really do suggest direct trade between Baluchistan and Sumer—a final piece of evidence is a carving showing a humped bull (unknown in Sumerian art, though the cult animal of prehistoric India, just as of modern Hinduism) found on an Early Dynastic site near Baghdad and carved in Sumerian technique. Such a representation almost suggests Baluchistan merchants in Sumer at this time, worshipping in their accustomed manner in a strange land. Humped bull figurines from Susa in Elam, of a similar date, may also be pointers in the same direction.

Of the remaining Baluchistan cultures, and that known in Sind from the site of Amri and other settlements, it is difficult to say much in respect of their foreign counterparts in the lands to the west. There are generalised resemblances between the Amri pottery and the group of wares which include Al 'Ubaid, but in the Indian material the use of two colours (black and red) on the buff background serves to separate the two areas and to suggest a comparatively late date for the more easterly wares. The full polychromy of Nal and the highly individual character of the pots and their ornament, again suggests a late, provincial, development in the Baluchi hills, and such stratigraphical evidence as we possess is in favour of a fairly late date for Nal, though not perhaps so late as I originally claimed when describing the Baluchistan material for the first time.

When we turn from the Baluchistan hills to the plains of the Indus and the Five Rivers, we encounter something strangely different from the little semi-barbarous communities with their mud-built villages and localised provincial distinctions in pottery styles.

The great cities of Mohenjo-daro and Harappa, with their regular lay-out in blocks like an American town, and their complex civic structure as reflected in municipal drainage systems and controlled building-lines, no less than the organisation of rural industry as exemplified by the granary area at Harappa, give a picture of an urban civilisation already mature when we first encounter it even in the lowest and most ancient strata. It is worth while saying at the very outset that the origins of this Harappa Culture are still unknown to us—the material which we have in such abundance, though undoubtedly stretching over a period of something like five hundred years at least, is startlingly homogeneous and shows neither a tentative beginning nor a more developed end. The fact that its painted pottery is decorated in a black-on-red technique suggests affiliation to the northern (Zhob Valley) group of Baluchistan cultures rather than to those of the south—in Sind, settlements of the mature Harappa Culture overlie those of people using the pottery of the Amri buff-ware culture, and other sites on the Ghaggar (Sarasvati) River show a similar stratification, with the lower levels containing a black-on-buff ware which may be comparable to that from Quetta.

Nevertheless, there are signs of contact between the Harappa Culture and that of Kulli in South Baluchistan to which we must return; for the present we may make a brief survey of the salient features of the Harappa Culture itself as it appears in the light of modern knowledge. It is, I think, probable that Harappa and Mohenjo-daro may be the only major cities in the Punjab–Sind area—a northern and a southern capital of an empire. Extensive fieldwork by Majumdar in Sind revealed a number of smaller sites, ranging from hamlets to small towns, and all attributable to the same Harappa Culture; of these one of the most interesting is that of Tharro, on what was once the coast of the Arabian Sea though now inland. Here is a great "promontory-fort" (unrecognised as a fortification by Majumdar) on a headland (which now overlooks a dry waste of sand stretching out to the mangrove-swamps of the present coast-line) with a formidable stone wall across the neck of the promontory, within which are remains of middens and abundant pottery which includes Amri ware but in which forms of Harappa type predominate. The whole site suggests a fortified trading-post, and seems comparable to another defended site, on the Makran coast at Suktagên-dôr, described by Stein and also yielding Harappa material.

The total range of the Harappa Culture is, however, far beyond this—the sites of Rupar on the Sutlej River in the Himalayan foot-

hills and that of Limbdi in Kathiawar have both produced pottery and other typical objects indistinguishable from the series from the major sites, and as I have mentioned, there seems to have been a trading-post in the Makran. Here and elsewhere in Southern Baluchistan there seems to have been much contact with the Kullii Culture, reflected in decorative motifs on Kulli pots derived from Harappa sources (stylistically these particular pots are late in the Kulli series) and in the presence of stone weights of the Harappa series in this distant region.

Since the time of the original publication of the Mohenjo-daro material by Marshall it has been customary to regard the two great cities as the outcome of a social system without parallel in the ancient Orient, whereby a large population was living in a complex urban organisation on conditions of approximate equality, and that the rigorous system of civic laws implicit in the cities, their planning and their organisation, was the outcome of some form of communal government in which the dominant element might have been a wealthy merchant class. It was claimed that no evidence could be found to suggest the place of a king or the temple of a god dominating over the rest of the town, although it was clear even from the reports on Mohenjo-daro, without visiting the site, that the Stupa Mound area, crowned by a great ritual bath and other buildings certainly not of normal domestic plan, was something suspiciously like a citadel. Doubts had entered the mind of the writer, and that of Dr. Mortimer Wheeler, independently and before visiting either Harappa or Mohenjo-daro—on the ground these doubts were converted to virtual certainty when one contemplated the twenty-foot high brick platform at Mohenjo-daro, or saw at Harappa evidence of a towering defensive wall with even bastions vaguely visible in the weathered sides of the AB mound. Dr. Wheeler's subsequent work at Harappa has triumphantly confirmed his diagnosis of the site, which we now know to have been dominated by a fortified citadel girt with a massive wall of mud-brick faced with burnt brick renewed more than once in the city's history.[1]

Whether the power thus symbolised by the fortified citadel was that of a king, priests, or a priest-king we do not know, but there seems to me a strong element of sacerdotal power implicit in the ritual

[1] For the Harappa and Mohenjo-daro citadels, see Piggott, *Some Ancient Cities of India* (1945); Wheeler, in *Illustrated London News*, Aug. 10th, 1946; *Ancient India*, No. 3.

bath at Mohenjo-daro and its attendant buildings, which do not recall any comparable palace plan. For the great brick platforms, one might cite as parallel the ziggurats of Sumer, and nearer to India are structures which may be comparable at Turang Tepe and Sialk VI, and even more significantly at Tepe Sorh-dagh, at Nad-i-Ali in Afghan Sistan, where a great platform of mud-brick, faced with burnt bricks, has been found, and having on it one room, paved and with a drain, which very much resembles the bath-rooms of the Harappa Culture.[1] So far as one can judge from the unsatisfactory excavation report, there seems to have been some form of brick platform at the Harappa town of Chanhu-daro in Sind.

The material content of the Harappa Culture is well-known and we may only comment on one or two points of particular interest. The use of burnt brick must indicate abundant forests to provide the vast amount of wood needed to fire so many million bricks, and with representations of forest animals on the seals from the Harappa sites goes to reinforce the metrologists' belief in the further westward extent of the monsoons in ancient times. The famous script must still remain un-read in default of a bi-lingual text, despite the efforts, often fantastic, to make a meaning from the extant material. It is interesting to note, as an example of the intense conservatism of the Harappa Culture, amounting to virtual stagnation, how the script is unchanged throughout the long history of the cities (at least nine building levels seem to have existed at Mohenjo-daro, though the record of stratification is so obscure that little reliance can be placed upon it in detail). The seals on which the script is so often used are of the stamp-seal family, probably a very ancient type in the whole Syrian-Iranian province, but not known in the Baluchistan cultures —a very few cylinder-seals have been found, which must betoken some slight influence from Sumer, but they are quite exceptional.

An important observation can be made with regard to the bronze figure of a dancing-girl from Mohenjo-daro, a justly famous piece of Harappa art. A detailed study of the rough clay figurines of women (goddesses?) from the Kulli Culture of South Baluchistan shows that their personal adornment was represented in some detail, and an invariable feature is the loading of the left arm with bangles, whereas only a couple are seen on the right wrist. Now this precise arrangement is seen on the Dancing Girl, who also has an elaborate coiffure in which the hair hangs in a heavy roll over the nape of the

[1] For Nad-i-Ali, see Ghirshman, in *Revue des Arts Asiatiques*, XIII (1939), 10.

neck. This again is exactly paralleled in the South Baluchistan figurines, who also wear large conical ear-ornaments of a type known in gold and other substances from the Harappa cities. We thus have a very satisfactory correlation established between the two cultures, which should represent a real chronological overlap.

We must, however, attempt a more precise dating of the Harappa culture at this point. One of the critical pieces of evidence cited in the past has been the piece of a decorated steatite box from the lowest level at Mohenjo-daro, which is precisely of the type I have already commented on from the Makran and South Baluchistan, and which appears in Early Dynastic contexts in Sumer (about 2800 B.C.). This could therefore mean that the lowest levels of the Harappa Culture as we know them could date back to Early Dynastic times, but this evidence is somewhat vitiated by the pieces of another steatite box of the same type found, also at Mohenjo-daro, but in the upper strata! It is clearly not wise to attach too much importance to a type which seems to have had such a long life, or at least survival-value.

The earliest unambiguous contacts between the Harappa Culture and that of Sumer occur in the time of Sargon of Akkad, about 2300 B.C. The Indian elements occasionally present in Early Dynastic times can, as we have seen, be better referred to South Baluchistan than to the Indus or the Punjab, but the Sargonid contacts are clearly with the Harappa Culture, as shown particularly by the characteristic stamp-seals often with the Harappa script upon them found on many Sumerian sites. The trade implied by such finds seems to have been almost wholly one-way, and may have been connected with the export of cotton goods from India to Sumer. But the possible Sumerian influences on the Harappa Culture are very slight —the cylinder-seals and perhaps some bead types seem almost the only evidence one can cite, and it is noteworthy, in emphasising the isolation of the Harappa Culture from the outside world, that the shaft-hole axe, already invented in Sumer in Early Dynastic times, never affected the Indian metal-smiths, who continued to make the most primitive types of flat axes to the end of the culture.

The western contacts of the Harappa Culture therefore only serve to show that the mature phase by which the civilisation is alone known to us is contemporary with Sargonid times in Mesopotamia— the obviously long duration of this Harappa phase, however, makes this correlation itself rather vague in terms of actual chronology. There is, however, some evidence which suggests to me that 2300 B.C.

is a date which is likely to relate to a fairly early stage in the history of Mohenjo-daro or Harappa rather than to a late one. From the former site come two copper or bronze pins, one with a head made of a spiral twist of wire from a depth of eighteen feet, the other with the head made to represent two black bucks' heads, back to back, from a depth of twelve feet. Whatever these arbitrarily recorded datum figures may mean in terms of the actual stratigraphy of the site is uncertain, but at all events neither of the pins can be regarded as very late in the city's history. Now both types of pin seem to belong to a province of ancient metal-work which includes Anatolia, the Caucasus and Northern Iran—other comparable Indian specimens come from Chanhu-daro (double spiral-head pin from the very end of the Harappa occupation or even later) and Harappa (a pin on the head of which a dog attacks a deer, found in top soil). The cumulative evidence from associated finds implies a date round about 2000 B.C. or rather later for such types in the region mentioned above, and I can hardly think they arrived in India much before 1800 at the earliest—at Chanhu-daro I should like to think about 1500.[1] If the two Mohenjo-daro specimens mean what they seem to—the occasional arrival of such pin types by trade during the hey-day of the city's life—clearly 2300 should be a date fairly early in the site, and 2000 B.C. something like a central date.

We can approach this problem from another angle—what was the date of the *end* of the Harappa Culture, if its beginning is so elusive? There is fortunately some important evidence that bears on this point when taken in connection with its western connections. At Chanhu-daro there was clear evidence that after the Harappa settlement was deserted, and probably in ruins, a new group of people occupied the site, building rough fire-places and hut-foundations of bricks robbed from the crumbling Harappa houses, and leaving considerable traces of a barbarian settlement that to a Western prehistorian forcibly recalls the Dark Ages occupation of an abandoned Roman site in Europe. The newcomers at Chanhu-daro used pottery that seems to carry on degenerate Baluchi styles, but more characteristic are the intrusive types of such as pins and shaft-hole bronze axes—all portable objects easily carried by a migrant population. And with this Chanhu-daro evidence we may take a shaft-hole axe-adze from a late occupation-level at Mohenjo-daro, and the evidence

[1] I have examined the affinities of these pins in detail in a paper to appear in *Ancient India* shortly.

of the cemetery at Shâhî-tump in the Makran, where graves were dug into the abandoned "tell" of the Kulli culture (approximately contemporary as we have seen with that of Harappa). From the Shâhî-tump graves come pots which are archaeistic renderings of ancient South Iranian types (basically similar to Susa I), but with them is a shaft-hole copper axe and several seals.

These seals have features in common with some from the late occupation at Chanhu-daro, and if we turn westward we see them as members of a family of stamp-seals that go back to Anatolia, Northern Iran, and even Russian Turkestan. Here too are the representatives of the shaft-hole metal axes and axe-adzes, and of the Chanhu-daro pins, all in comparable contexts that seem to date from 2000 B.C. or later. The appearance in India of these portable elements of a culture, but the local adoption of indigenous pottery styles, surely suggest an immigration from west to east predominantly of a masculine and probably of a martial nature, rather than a slow spread of cultural elements such as we saw in the beginning of the Baluchistan series of prehistoric cultures in their relationship to those further west. That a more positive extension of culture eastwards did take place however at this time or rather later, is suggested by the finds from Nad-i-Ali in Sistan already mentioned, where pottery paralleled in the B cemetery at Tepe Sialk occurred.

What then is the context of these movements from Anatolia, the Caucasus and Northern Iran towards India at a time which the archaeological evidence suggests should be between about 2000 and 1500 B.C.? It is impossible to avoid reference, at this point, to the migrations of peoples speaking Indo-European languages, amongst whom were the Sanskrit-speaking Aryans first known in Northern India. The date of the arrival of these people in India is commonly given as about 1400 B.C., a date which seems to have been arrived at by a species of dead-reckoning not in itself wholly convincing. Assuming that a regular growth of philosophical ideas can be traced in the huge corpus of Sanskrit literature, the extant works are arranged in a series which begins with the Rig-Veda and culminates in the Upanishads, from the mature metaphysical conceptions of which it is clear that much of Buddha's teaching was derived. As the date of Buddha's death is fairly well fixed at somewhere between 480 and 500 B.C. this gives a lower limit for the Brahmanic corpus, and by guessing at the length of time necessary to allow for various developments of ideas, the upper limit for the compilation of the earliest elements in the Rig-Veda is set at about 1200–1400.

This estimated date receives some confirmation from the Hittite documents of about 1380 which mention the gods of the Mitanni, whose names strongly resemble personages in the Vedic pantheon, and as we have seen the archaeological evidence of folk-movements, likely to have been fairly rapid and perhaps martial in character, to judge from the absence of any accompanying pottery technique, and coming from the west to India, is not incompatible with such an approximate dating. While we cannot go so far as to claim that the exiguous finds of stamp-seals, pins and axes represent the material culture of the Aryans, or that Vedic hymns were sung amid the barbarian squalor of the re-occupied Harappa ruins at Chanhu-daro, we may nevertheless see that here is some tangible intimation of invaders from the west at least not unconnected with the Aryans themselves. The citadels of the Harappa Culture sites give colour to the belief that these were the defenced towns sacked by the newcomers—achievements of heroic barbarism which receive commendation in the Vedic hymns—and the picture of Aryan culture contained in the extant literature does not present a society more exalted in the arts of living than that depicted in the *Iliad* or in the Scandinavian sagas, and so not likely to leave in the archaeological record remains so vastly different from those I have described. Future excavations may yet reveal the dice with which the Aryans gambled, and the furnishing of their chariots and horses.

Archaeology as a Social Science

INAUGURAL LECTURE

By V. G. Childe, *Professor of Prehistoric European Archaeology*[1]

I AM very conscious of the responsibility laid upon a new professor of a somewhat obscure subject. This responsibility is enhanced when one in a sense succeeds an honorary Director of such outstanding genius as my friend R. E. M. Wheeler, who is now devoting his unrivalled talents to the cultivation of a still wider field. It is, indeed I think, incumbent on the first holder of such a new professorship to explain as it were his terms of reference—at least how he interprets them—nay, to explain them not only to his prospective students, but to his actual and senior colleagues.

Now when nineteen years ago I delivered an inaugural lecture as the first occupant of the Abercromby Chair of Prehistoric Archaeology in Edinburgh, I thought archaeology ought to yield an imitation of political history. So I took as my theme the Beaker-folk. I did so not only because the Chair's founder had made his most distinguished contribution to prehistory on that very topic. I chose it also because it served well to illustrate how prehistory could be made to approximate to history as usually understood. Abercromby had shown with conspicuous acumen and with rich documentation how a prehistoric people or society could be defined archaeologically by a recurrent assemblage of distinctive relics, most easily recognised by the characteristic clay drinking vessel that serves still as the eponym of the whole group. These Beakers were repeatedly found both in Great Britain and on the Continent associated in distinctive burials with an equally distinctive set of arms and ornaments—copper or flint daggers, arrow-heads, bowmen's wrist-guards, buttons with V-perforation, trinkets of precious substances, and incidentally skeletons of a characteristic brachycranial type.

[1] Professor Childe's Inaugural Lecture was delivered in the Autumn Term of the Session 1946–47, and therefore falls strictly outside the period covered by this Report, but is included to avoid additional delay in publication.

The assemblage thus defined is a perfect example of what archaeologists unhappily term a "culture." In its case their usual assumption is particularly plausible. Cultures, we believe, represent peoples; the recurrent association of distinctive but arbitrary types of weapons, ornaments, vessels and burial rites must reflect, and be due to a unity of social traditions such as distinguish a people. The distribution of this assemblage can only result from the physical migration of this social group. Beakers, you must remember, are found from the Vistula to the Irish Sea and from Sicily to Shetland, normally with the appropriate associates, skeletal, ritual and material. This concept of a culture, first rigorously defined and applied in British archaeology by Abercromby, was still rather novel in 1927. You see it offers the prehistorian the chance of identifying events of the same order as those that bulk so large in ordinary history. With its aid he can trace the movements of peoples, the replacement of one society by another or the fusion of two societies; for archaeologists distinguish "mixed cultures" exhibiting traits proper to two or more assemblages. No doubt the prehistorian by the very nature of archaeological method cannot reach the individual; for like natural scientists, archaeologists deal with abstract types and masses. But if the individual leader be unrecognisable, the particular battle unidentified, peoples and their movements can and should figure in the prehistorian's picture.

The definition of cultures and the pursuit of popular wanderings thus seemed a major task of archaeology and certainly has a wide appeal. But nineteen years have changed my conception of prehistory, or rather, of history. The "culture" is undeniably a most significant concept; it provides the clue by which archaeologists can identify and study societies rather than mere collections of lifeless relics. Migrations too have to be taken into account. But they after all are only incidents, perhaps even minor incidents, in a more significant and comprehensive process, secondary details in a more imposing pageant. Just because archaeology is forced to deal with abstractions, it may be able to descry significant perspectives that are obscured in the welter of events that interrupt the landscape in recorded history. Moreover it has an enormously longer view than is provided by written records; on my colleague's Zeuner's estimate the archaeological record exceeds the literary in temporal span exactly an hundredfold. With these advantages to offset admitted deficiencies, archaeology may be able to provide knowledge, practically useful knowledge, of the course of human affairs that eludes the literary historian. I am in fact going to suggest that archaeology is an

indispensable element in the social sciences as they have recently been defined by the British Association's Committee on "the Scientific Study of Human Institutions." Archaeological data can and must provide the reliable basis requisite for the study of what that Committee terms "the dynamics of social change" and can alone furnish evidence on "the long-range trends in the life of societies" (to quote the same report again).

Archaeology is, I maintain, a Science, but admittedly not an exact, only a classificatory, science. The systematic classification of the surviving results of human activity, what we term artifacts, was the beginning of archaeology. The decisive step in making archaeological classification scientific was taken a century and a quarter ago when Thomsen decided to classify in the same group those prehistoric Danish artifacts that hung together because they were in use in the same period of archaeological time. That is the meaning of his famous system of the Three Ages. The Bronze Age represents an assemblage of human products that coheres because the products were used in that age.

But of course artifacts hang together in assemblages that recur repeatedly not only because they were used in the same "age," but also because they were used by the same people, made or executed in accordance with techniques, rites or styles prescribed by a social tradition, handed on by precept and example, not by biological means, and modifiable in the same way. That is the significance of the newer concept of culture to which I have already referred. By its use the archaeologist finds himself classifying not merely relics and monuments, but assemblages of such—cultures. And these stand for societies—distinctively human groups or units. Thus archaeology can join forces with ethnography in providing material for a comparative science of society, for what would be frankly termed sociology in America.

Now for this purpose the analysis of archaeological cultures must be more profound than for just displaying their fortunes as the personae in a pseudopolitical drama. In tracing a migration a small constellation of distinctive and easily identifiable traits suffices in defining a culture. Abercromby could be satisfied with a rather peculiar and so readily recognisable pot together with one or two types of warlike accoutrement. As long as prehistorians were absorbed in tracing migrations, they were liable to neglect many aspects of an assemblage that were not significant for that particular purpose, because they were not distinctive or not obviously distinctive. Books

have been written professedly dealing with prehistory, but actually devoted almost exclusively to flint-work, pottery or tomb-plans, their distributions and interrelations. There was a real danger of archaeology degenerating into an exclusive study of type-fossils, handy indices to age or affinities.

Fortunately British archaeological tradition was sounder than, for instance, the German. Whatever may have happened to some armchair prehistorians, like myself, our field-workers and excavators have never lost sight of the ideal, clearly expounded in the glorious sixties, when prehistory was being definitely established as a science. That ideal was and is to resuscitate the whole life of the community whose settlements or graves were being explored. My distinguished precursor, the first and honorary Director of this Institute, is not only the greatest master of the technique of excavation, but also a leading exponent of this ideal in conservation and interpretation. To-day, it is universally admitted that it is the archaeologists' duty to reconstitute, as far as their material allow, the culture they are studying as a functioning whole. Only so can they clothe with any sort of life the relics and monuments, only so can they present to the sociologist real, working societies instead of lifeless abstractions.

With this end in view every scrap of information becomes significant. For instance, take food refuse; all societies inhabiting Europe during the last ice age occasionally hunted and ate mammoth; the pachyderms' bones, being easily recognisable, have always been noted in excavators' reports as handy indices to chronology. But the proportion of mammoth bones at any given site was seldom recorded. Yet we ought to be able to estimate the relative importance of mammoth-hunting in the food-quest of each group—it must have involved a special form of social co-operation, different from what would provide bison or wild horse flesh. Again all neolithic Europeans bred cattle and sheep and did some hunting, but there was wide variation in the relative importance of the several kinds of stock and of tame to game animals eaten. Masterly excavation by the late Professor Vouga of Neuchâtel and the co-operation of zoologists have recently shown that in the famous Swiss lake-villages the proportion of game represented in the food-refuse actually increased during the neolithic age. This objective and quantitative observation upset some *a priori* theories and entailed a complete revision of current notions as to the efficiency of neolithic economy. It is really my Soviet colleagues who have shown the way. Again the archaeologist should not be concerned only with things made or done by the community under

investigation; he needs to know also the non-human background against which these activities were conducted. For the culture an archaeologist should study functioning, functioned as an adaptation to an environment, and can therefore only be understood when that environment is reconstituted. He must therefore seek indices of the vegetation that clothed the land at the time and of the climate then prevailing. British archaeologists have been peculiarly alive to this need. It suffices merely to mention Sir John Myres, O. G. S. Crawford, Sir Cyril Fox and again Dr. Wheeler himself. Appropriately enough I now have as my colleague at this Institute a Professor of Environmental Archaeology.

By attention to such details and by combining observations at a number of sites, archaeology can conjure up a tolerably realistic picture of the life of a preliterate community—or at least of the material basis of its life. It can state in some detail how such a society got its living, that is, its food; it can enumerate perhaps half its industrial occupations and make some plausible deductions as to the extent of division of labour within it; it affords substantial, though admittedly far from exhaustive, information about exchanges of raw materials or manufactures with other groups so that we can estimate the degree of dependence on "trade," though naturally not the precise form of interchange. In addition to such data on production we can sometimes discern grounds for cautious hypotheses as to the division of the product; chieftainship, for example, can in some cases be positively asserted though seldom confidently denied. Finally, an embarrassing remainder of so-called ritual objects affords a precarious basis for speculation on the ideological superstructure.

I have been speaking just now of preliterate societies, prehistoric cultures. For not only am I professor of Prehistoric European Archaeology, but also, if we are to discover really "long-range trends in the life of societies," we must go back behind the literary record into a remoter past. Moreover, the most purely archaeological methods have been elaborated for, and are most distinctively exemplified in, the study of preliterate societies. But this is an Institute of Archaeology. As I have argued here at greater length on a former occasion, archaeology is one. Purely archaeological methods can be applied just as well to the study of Classical Greece or Tudor England. They will yield pictures of Hellenic culture or Tudor culture of precisely the same kind as those of Neolithic Greece or Upper Palaeolithic Britain.

By the same token the archaeologists' cultures are strictly

comparable to those described by ethnographers among illiterate tribes of to-day—Arunta, Kwakiutl, Trobrianders or Baganda. Of course, the ethnographic record, like the historic, is far more complete than the archaeological. This is hardly the occasion to expatiate on the incompleteness of the archaeological record. But the latter has one decisive advantage over the ethnographic. Its cultures develop or succeed one another in time; for, however ambiguous prehistoric chronology admittedly is, the sequence of cultures in most parts of Europe and the Near East is by now pretty well established. Now for the sociologist this is an enormous advantage. The comparative sociologists or ethnographers of last century—Maine, Morgan, Spencer, Tylor—tried to trace the development of individual institutions or of culture in general. From the variety presented by contemporary societies, some isolated forms of one institution, say marriage, and arranged them in a hierarchy that should represent consecutive stages in that institution's development; others like Morgan classified societies themselves in a hierarchical series as representing or illustrating steps in the abstract evolution of abstract culture. Methodologically there was at least one grave defect in their procedure; in both cases order in the sequence, rank in the hierarchy, was determined, and had to be determined, *a priori*, that is, by the personal prejudices of the investigator; they naturally assumed that Christian marriage or American free enterprise represented the highest grade, the latest term in the series.

In the archaeological record, the sequence of cultures is determined objectively, by stratigraphical and other observations that are yielding agreed results. In other words, the position of any culture, or—for what it is worth—any device, in the sequence, its rank as it were in the hierarchy, can be decided not subjectively but historically. Moreover, archaeology offers not one, but a rapidly growing number of, sequences. In other words, we know and can observe a whole constellation of cultures, or societies that occupy respectively the same position in the sequences established for Great Britain, Denmark, Greece, Hither Asia, Egypt, and so on. All such may be termed, to revive an expression of Huxley's, homotaxial.

Archaeology can offer such material to the social sciences. An archaeologist should be able to say: Here is a group of homotaxial cultures, societies in the same relative stage in evolution. What common features, if any, can be recognised in all? Archaeology can further indicate the transformations or replacements each underwent. If any uniformities or scientific laws summarise the dynamics of

social change, such should be discoverable by induction from the instances archaeology can provide. Each culture exhibits, even to the archaeologist's limited vision, several aspects. When we compare successive cultures, how do the several aspects vary and how are the variations in each related? Is there any rule to connect these variables?

Let me for a moment turn to another approach, another vista opened up by the recent advances in archaeological techniques. To an increasing extent prehistorians are building up a framework for the chronology of illiterate cultures continuous with that currently applied to historical societies. My colleague, Zeuner, combining geological, climatological and astronomical clues, has been dating the past for 500,000 years in the same sort of terms as the events recorded in written sources during a bare 5000. I am sure Zeuner will admit that his dates for remote prehistoric events lack the precision of those assignable even to such early historical events as the erection of the Great Pyramid or the foundation of the Akkadian Empire. But allowing a margin of even 20 per cent in the older Stone Age datings, some surprising conclusions emerge to which Zeuner himself has drawn attention. He remarks on the enormously long duration of certain palaeolithic cultures; 300,000 years for the Acheulian, 50,000 for the Magdalenian. That just means that technological progress was then incredibly slow in contrast to what we note in later prehistoric times to say nothing of post-Renaissance Europe. It should be possible to determine the rate of technological progress with mathematical accuracy and express it in a graph. Admittedly that is difficult, and I am not going to try to present such a curve here nor to justify it. In principle it is feasible, and a curve representing the rate of technical progress is a not too remote possibility. Archaeologists should be able to provide materials for other curves for comparison.

On not exclusively subjective grounds I believe that technological progress is closely bound up with intercourse, the exchange of ideas between societies. Now an archaeological index of the intensity of any society's intercourse with other human groups is provided by the foreign materials or manufactures it imported. With their aid then the intensity of intercourse can be roughly measured. Its variations with time could be expressed by a graph, and this graph could be then compared with those expressing the rates of technological progress. I used the plural deliberately. We should be able to construct graphs of the invention rate and of the intensity of intercourse for different societies, whether prehistoric or historic, and compare

these. I would like to remind you that even among literate societies before the European Renaissance the evidence for new inventions is mainly archaeological. Classical and mediaeval literature gives very meagre, generally indirect, and often ambiguous hints about significant technical advances, such for instance as the rotary quern or the carpenter's brace. More adequate and reliable information is provided by the instruments themselves or at least, by representations of them on vases, mosaics or illuminated manuscripts. Down to the days of Leonardo da Vinci and Agricola indeed the history of applied science is more an archaeological than a literary undertaking. I should specially like to insist on this fact as among my new colleagues is a new professor of the History of Science.

Now if archaeologists are to provide data for the history of Science and for the scientific study of human institutions, they sorely need the assistance of natural scientists. We have our hands full in rescuing and classifying the fragmentary and scattered remains of past human activity, in establishing the function, chronological position and relations of these scraps. To carry out these, our proper archaeological tasks, we must master an imposing body of specialised knowledge and acquire an armoury of refined techniques. We cannot at the same time be zoologists, botanists, geologists, metallurgists, chemists, astronomers. We have to invoke the aid of professional zoologists to determine the animals hunted or bred by past societies. Yet this determination is essential for the functional description of such societies as I have already indicated. Again we must appeal to botanists to tell us what vegetable foods were consumed, what timbers were used in building or for fuel, what flora dominated the vanished landscape. Only petrologists can decide the stones used for tools and the clays from which pots were made. Yet it is on the answers to these questions that the prehistorian must rely in estimating the extent of intercourse maintained by a Stone Age society. Let me quote an instance: Petrological examination of the clays used for the manufacture of vases found in a neolithic village near Cologne showed that quite a number of pots used and broken there had been made on the lower Main and transported forty or fifty miles down the Rhine valley. It is just as important to know the ores used for ancient bronzes or whether an iron axe were forged or cast. But only analysis of the impurities by an expert metallurgical chemist and the specialised knowledge of geologists can provide the answer. It would be wearisome to try to complete the list of cases wherein archaeologists must depend on natural scientists.

Perhaps you will say a really competent archaeologist should combine in his person all the specialised knowledge and techniques I have indicated. Personally I should feel a trifle sceptical about diagnoses and analyses made by a polymath who professed ability to determine animals' bones and charcoal fragments, make pollen diagrams, identify minerals and analyse slags. Perhaps, on the other hand, an archaeological institute should possess a staff of botanists, phytologists, zoologists, petrologists, chemists and other experts. I am indeed fortunate in having as my colleague a palaeontologist and glaciologist of international reputation. But the intimate association of these two branches of geology with one branch of archaeology is almost unique. Pleistocene geology and palaeolithic archaeology are virtually interdependent. The archaeology of later periods is not dependent to the same degree on petrology or metallurgical chemistry nor can it offer them the same positive help in return. A petrologist, for instance, might grow bored if all he had to do in life were to determine the sources of prehistoric artifacts. A qualified petrologist might well take up that sort of research for a hobby and would find it engrossed his leisure very profitably—there is plenty of material awaiting examination. I doubt whether its examination would be socially justified as a full-time employment for life. Anyhow we cannot afford it. On the other hand, I am sure that if my colleagues in other departments grasp what archaeology is getting at and the significance of the answers they can give to our questions, they will readily help us. Happily this Institute is not an isolated unit but an integral part of the University of London. So perhaps I need pursue this theme no further now.

Indeed I have talked such a lot about the help archaeology needs from natural sciences and the contribution it can make to the social sciences, that the inaugural lecture of a prehistoric archaeologist may seem like a discourse on sociology. Yet the discussion will not have been irrelevant if it has helped to clarify the nature and aims of archaeological studies. The archaeologist has not quite finished his job when he has classified his artifacts into their appropriate periods and cultures. If that had been the sole end of archaeology, we might complaisantly let it turn into a pale imitation of some natural science. Professor Garrod at Cambridge very wisely devoted her inaugural lecture to a warning against just that drift. It would be just as wrong to turn archaeology into a sort of pseudo-human palaeontology as to make it a pseudo-political history. As my Cambridge colleague so appositely insisted the objects of archaeological study

are "artifacts, imagined and made by man"; their significant features are determined, not by mechanical processes, but by social traditions and purposes. Accordingly to be significant archaeological classification must embrace the cultures, that is, the societies whose aims and needs determine the artifacts' characters.

Now archaeological classification whether of isolated artifacts or of the assemblages, termed cultures and equated with societies, is still based on the principle of the Three Ages. No doubt since Thomsen's day the three, by a process of fission, have become seven, but the basis of classification remains the materials and techniques used for the manufacture of cutting tools. This system was originally designed as a chronological framework for the classification of prehistoric artifacts from a single homogeneous area—Denmark. For that purpose it provided at least a useful scaffolding. Not only in Denmark, but also in England, Switzerland and other comparable geographical units it facilitated a provisional grouping of remains first into consecutive periods and then into cultures. The latter, built up with the aid of this scaffolding, were quite naturally classified in the same framework.

But as a chronological principle the system broke down as soon as it was applied outside restricted areas. To label an artifact or a society "neolithic," for instance, tells you absolutely nothing about when the artifact was made nor when the society lived. The Maoris were as neolithic in 1800 A.D. as the Danes in 1800 B.C. That is by now a truism to prehistorians though it often comes as a shock to one's students.

Various attempts have been made to give these hallowed terms some other content—their sanctity is such that they still qualify the divisions of the examination for the Academic Diploma in Archaeology. Thomsen's "Ages" doubtless do represent technological stages that did succeed one another in the same order wherever they occurred. The cutting tools and weapons, the material for which qualifies the age or stage, are admittedly essential items in a society's equipment. There is no question that the replacement of stone by copper or bronze, and of bronze by iron meant in one way or another substantial extensions of society's control over its external environment, and reacted on many aspects of social activity. To that extent Stone Age, Bronze Age, Iron Age and their subdivisions do denote significant stages in technological progress.

But two years ago I had to point out in detail how the Bronze Age for example was even technologically anything but homo-

geneous in its content. In fact the single term covered three distinct modes of using metal: (1) mainly for weapons and ornaments; (2) also for craftsmen's tools; and (3) also for agricultural and other rough work. But with a clearer conception of the aims of archaeology it appears that this narrowly technological basis of classification is not really serviceable, even when adjusted to allow for such modal variations. For instance, the literate and civilised Egyptians of the Old Kingdom used metal in mode 2 of the bronze stage; quite illiterate barbarians in Britain used it already in mode 3 of the same stage.

But no sociologist nor anthropologist would accept a classification that assigned to the same stage a Baganda kraal and London, or even Lhasa. Yet that is in effect what the traditional classification does. Ur of the Chaldees as revealed by Sir Leonard Woolley or Tell el-Amarna as excavated by the Egypt Exploration Society are assigned to the Bronze Age along with the hamlet on Plumton Plain explored by Curwen or the four or five huts at Jarlshof in Shetland uncovered by Dr. A. O. Curle. In both bronze was used and used in the same mode, but the difference in magnitude alone is enough to constitute a qualitative distinction. And that is not the worst. On the usual archaeological classification the Maya cities of Central America would be neolithic and belong to the same stage as the villages of Skara Brae in Orkney or Köln-Lindenthal on the Rhine. But concretely and historically they have much more in common with Ur or Tell el-Amarna. In other words, for the sociological or anthropological evaluation of archaeological data, the convenient technological criteria are no longer useful but actually misleading.

The weaknesses of the traditional basis are obvious. In the first place cutting tools and weapons, the material for which serves as the criterion of classification, by no means exhaust the forces of production at the disposal of society. Transport facilities and even natural resources may exert just as decisive an influence on social structure. Secondly, it is not the forces of production that immediately constitute the determinant, but the mode of production, the economy within which these forces can function. If archaeological data are to be really serviceable in the social sciences, they must be presented classified on a new and less superficial basis.

This is not the place to attempt such a revision. It must be framed in consultation with anthropologists and historians. The scheme, savagery, barbarism, and civilisation, outlined by Lewis H. Morgan and elaborated by Frederick Engels and others, tries to do

justice to the needs I have mentioned, and at the same time to insert in its criteria definitions that shall be perceptible to the archaeologist. That is essential. It may be the business of sociologists to decide what civilisation should mean. An archaeologist is entitled to demand consideration for the limitations of the archaeological record. For the prehistorian phrases like "contract replacing status," or "division into classes," can have no meaning. Writing, on the contrary, the criterion proposed by Morgan, would be convenient for the archaeologist.

To conclude; however jejune the language and bleakly abstract the expressions, this tedious discourse may have convinced some that archaeology has a distinctive contribution to make to the scientific study of human institutions, to that science of man that is to-day an admitted need rather than a reliable and practically productive discipline. No practical fruits can yet be offered; time forbids even a mention of the requisite observational techniques. Professional archaeologists are familiar with these already; students will hear enough of them. But even archaeologists themselves will do well to reflect on the wider issues outside their special domain, to realise problems they are not expected to answer themselves, but only to provide material for answering. The realisation of this wider context is the best safeguard against the degeneration of archaeology into a mere escapist diversion—what our Russian colleagues contemptuously call *veschevedenniya*-reliquology. This wider context, their social implications alone, put the observation and classification of artifacts and assemblages of artifacts on a different level to, say, philately or the collection of matchboxes.

Subscribing Membership of the Institute

A SCHEME of membership of the Institute was established in the Session 1937–38. The object of the scheme is on the one hand to enable others in addition to the registered students to make use of the facilities of the Institute, and on the other to enable those interested in the furthering of archaeological research and teaching to support the work of the Institute.

The minimum subscription is one guinea per annum, but larger sums will be most welcome. Details of arrangements for Life Membership, depending on the age of the member, can be obtained from the Secretary. A covenant to subscribe for seven years will enable the Institute to recover Income Tax on the amount of the subscription, and the Management Committee will be most grateful if members are able to give this Covenant.

Privileges of members are as follows:—

1. Notices of all lectures, exhibitions, etc., at the Institute.
2. The free issue of the main publications of the Institute. These consist in the first place of an *Annual Report* (suspended during the war) containing a statement of work done during the year, the text of certain of the lectures given at the Institute, and other suitable archaeological matters. Secondly, a series of *Occasional Papers* is issued. These deal with subjects for which there is not already a suitable medium of publication, and include or will include monographs on particular classes of archaeological objects, descriptions of objects or groups in the Institute's collections, Geochronological Tables, and monographs on archaeological methods and technique.
3. The use of the Institute's library. Books may be used in the reading room, borrowed for use elsewhere, and can be sent by post.
4. The use of the Institute's slide collection, at a small fee. The collection includes besides basic material on prehistoric Euro-

pean and British archaeology, a large number of slides illustrating excavations in this country and Palestine.

5. A reduction of approximately 25 % on the fees for those courses of lectures for which a fee is charged.
6. The use of the Institute's technical departments, namely, Geochronological, Photographic, Repair and Drawing. Work is carried out for members, and a reduction of 25 % is made in the fees charged. Advice is given to members on problems related to the work of the Departments.
7. Advice on archaeological reading on subjects covered by the teaching of the Institute can be given if required.

Tessa Verney Wheeler Memorial Bursary

IN accordance with the wishes of the majority of subscribers, it was decided that the fund collected in memory of Tessa Verney Wheeler should be devoted, after the provision of the tablet in the Library of the Institute, to the establishment of a bursary for the assistance of archaeological students. The capital, amounting to £569, has been invested in the name of the Society of Antiquaries of London, and the interest will be devoted to this object. The administration is in the hands of a committee appointed partly by the Society of Antiquaries and partly by the Institute of Archaeology. The object of the bursary is to give assistance to students in archaeological studies in any way which may appear most useful to the committee. It may, for instance, be given for travel for the purpose of research, for the purchase of books and equipment, or for assistance in living expenses during excavations or while pursuing a course of study. The bursary may be divided among a number of students, or given to one only, or it may not be awarded at all in a particular year, if there is not a suitable candidate.

It is realised that the amount available is not large, but it is felt that even small grants will often make a great deal of difference to some students. Everyone would agree that the use of the fund in this way would have been in accordance with Mrs. Wheeler's wishes, and it is hoped that once a fund such as this has been started, it may form a nucleus to which additions may from time to time be made.

Teachers or field-workers who hear of suitable candidates should apply to the Secretary of the Society of Antiquaries, Burlington House, W.1.

University of London Institute of Archaeology

PUBLICATIONS

Reports

First Annual Report for 1937 (with papers by A. T. Bolton and C. F. C. Hawkes) .. .. Out of print

Second Annual Report for 1938 (with papers by V. Gordon Childe and Stanley Casson) .. .. 5s.

Occasional Papers

	PRICE
1. The Tenure of Land in Babylonia and Assyria. By Rachel Clay ..	2s. 6d.
2. Geochronological Table No. 1, An Attempted Correlation of Quaternary Geology, Palaeontology and Prehistory in Europe and China. By W. C. Pei	2s. 6d.
3. Geochronological Table No. 2, The Age of Neanderthal Man, with Notes on the Cotte de St. Brelade, Jersey, C.I. By F. E. Zeuner	3s.
4. Geochronological Table No. 2, The Chronology of the Irish Stone Age. By H. L. Movius, Jr.	3s.
5. Report of the Conference on the Future of Archaeology (1943) ..	3s. 6d.
6. Report on the Conference on the Problems and Prospects of European Archaeology	5s.
7. The Terraces of the Upper Rhine and the Age of the Magdalenian. By Day Kimball and F. E. Zeuner	3s. 6d.

Notes on Miscellaneous Subjects

Catalogue of an Exhibition of Recent Archaeological Discoveries in Great Britain and Northern Ireland, 1938	1s.
Notes on an Exhibition of Pottery of the Early Bronze Age of Cyprus, 1939. (Material from excavations sponsored by the British School of Archaeology, Athens, carried out at Vounous, Cyprus	4d.
Summary of Archaeological Organisations in Great Britain	1s. 9d.
Summary of Archaeological Organisations in some European Countries	3d.